

REMARKS

Claims 1 and 3 are pending. Claim 1 has been amended to recite the subject matter of canceled claim 2. New claim 4 finds support at paragraph [0017]. No new matter has been added by way of the above-amendment.

Prior Art Based Issues

The following prior art based rejections are pending:

- (A) Claims 1 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ise et al., US 2004/0124769 A1 (hereinafter “D1”); and
- (B) Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over D1 in view of Takahashi et al., US 6,048,631 (hereinafter “D2”).

Applicants respectfully traverse both Rejection A and Rejection B.

In view of the fact that claim 1 has been amended to recite the subject matter of claim 2, Rejection A is rendered moot. Applicants now discuss Rejection B.

The OEL (Organic electroluminescent device) of the present invention has the feature in the material used for the light-emitting layer. The light emitting layer contains host material and guest material and utilizes phosphorescence. The host material is a compound represented by general formula (III) and guest material is an organometal complex containing at least one metal selected from the group consisting of ruthenium, rhodium, palladium, silver, rhenium, osmium, iridium, platinum, and gold.

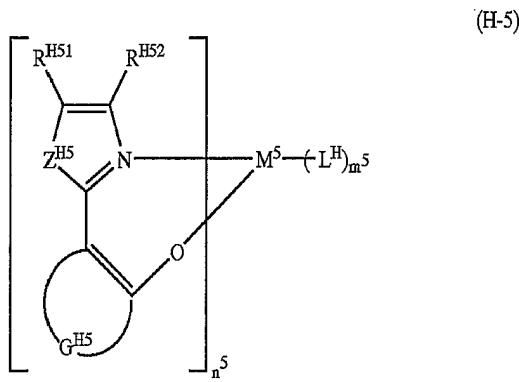
D1 discloses OEL which uses phosphorescence. However, D1 does not fairly suggest the compound represented by general formula (III) as a host material, as presently claimed.

D2 discloses the compound represented by general formula (III) as a material used for a light-emitting layer. However, there is no teaching or suggestion in D2 that an organic metal complex can be included as a guest material in the light-emitting layer, as presently claimed. Furthermore, the OEL described by D2 utilizes fluorescence, not phosphorescence as required by D1 (and newly added claim 4).

The present inventors have surprisingly found that the luminous efficiency of phosphorescence is approximately three times that of the conventional OEL utilizing fluorescence. This property is clearly unexpected based on the teachings of D1 and D2. As stated by the court, "when an Applicant demonstrates substantially improved results,... and states that the results were unexpected, this should suffice to establish unexpected results in the absence of evidence to the contrary." *In re Soni*, 34 USPQ2d 1684, 1688 (Fed. Cir. 1995).

Furthermore, the Examiner considers it obvious to modify the OEL of D1 so as to use a compound represented by instant general formula (III) which is disclosed in D2, since D1 discloses similar compounds to compounds of instant general formula (III). Applicants respectfully disagree.

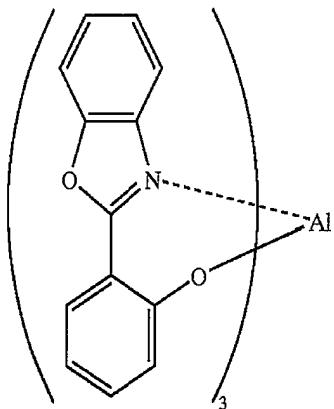
The Examiner relies on general formula H-5 and H-6 of D1 for generically encompassing the compounds of instant general formula (III). H-5 has the following structure:



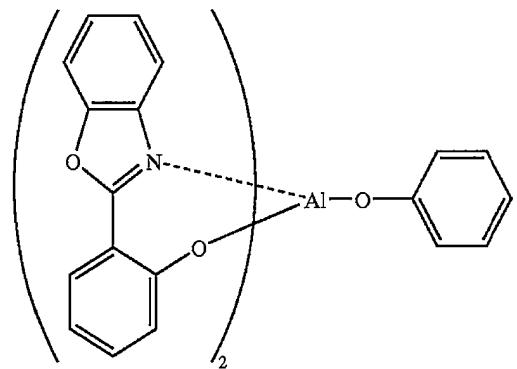
In this formula H-5, L^H represents "a ligand." There is no further limitation of L^H . Also, in formula H-6, L^H represents "a ligand" without further limitation. As such, H-5 and H-6 encompass millions of compounds.

In addition, it is noted that the actual exemplified compounds of D1 are structurally distinct from the present invention to such an extent that D1 *teaches away* from the present invention. For example, Applicants note that D1 teaches formulae 44, 45 and 47 as an aluminum complex which are as follows:

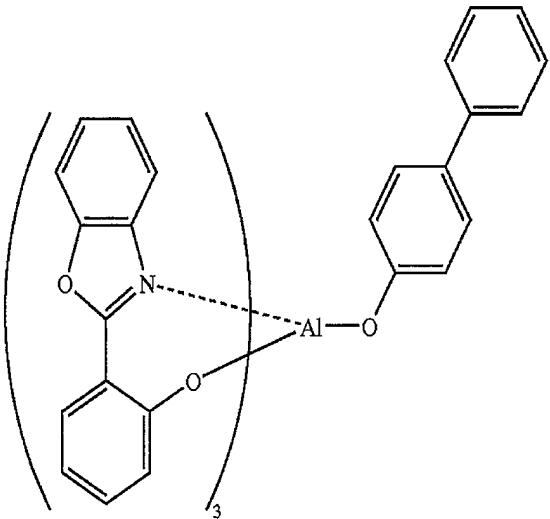
44



45



47



It is noted that none of these compounds have a core having an -Al-O-Al- metal-containing group, as presently claimed Applicants respectfully submit that there is no fair

suggestion by D1 to incorporate a core having an –Al-O-Al- metal-containing group, as presently claimed.

Clearly the Examiner is aware that luminescent materials which are used for fluorescence are not all capable of acting as host materials utilizing phosphorescence. As such, there is no reasonable expectation that modifying the host material of D1 which gives phosphorescence with the compounds of D2, which are used in a fluorescent environment would give a successful OED. This is because the art is *unpredictable*.

Here, the Examiner has identified two references which the Examiner alleges contain all of the elements of the instant claims. However, simply showing that all of the elements of the application/patent claim are present in the prior art does not necessarily mean that the invention is obvious. "This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1389 (U.S. 2007).

In *KSR Int'l*, the Supreme Court emphasized that a reason for the skilled artisan to do what is claimed is part of the obviousness inquiry. Justice Kennedy states: "As is clear from cases such as *Adams* [383 U.S. 39, (1966)], a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art...it can be important to identify a **reason** [or rationale] that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR International Co.* at 1396. (Emphasis added).

In *KSR Int'l*, the Supreme Court gave several rationales for use in the obviousness analysis (see rationales A-G in the "Guidelines" in MPEP 2141). In the present case, the Examiner's rationale is similar to Rationale (A) which is the combining of prior art elements according to known methods to yield predictable results. However, this rationale is not proper in arts that are relatively unpredictable. The obviousness standard based on the *KSR v. Teleflex* case involved a mechanical device in a relatively predictable technological area. The courts recognize that inventors face additional barriers in relatively unpredictable technological areas such as the

chemical area as noted in *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 83 USPQ2d 1169 (Fed. Cir. 2007).

As such, in view of the improved the luminous efficiency of the phosphorescent OEL of the present invention and the fact that the art is unpredictable, there is no fair suggestion to use the aluminum compound of D2 (utilizing fluorescence) in the phosphorescent OEL of D1. In short, the presently claimed invention cannot be said to be obvious. Reconsideration and Withdrawal of Rejection B are respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Registration No. 43,575, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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